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EXAMINER	
NAJJAR, S	
ART UNIT	**PAPER NUMBER**
2154	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/356,997	Applicant(s) THACKER ET AL.	
	Examiner Saleh Najjar	Art Unit 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

1. This action is responsive to the amendment filed on January 31, 2001. Claims 8, 15, 16 were amended. Claims 17-19 are newly added. Claims 1-19 are pending examination.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malkin et al., U.S. Patent No. 6,085,193.

Malkin teaches the invention substantially as claimed including a method and system for prefetching data for clients associated with a proxy server hierarchy and an enhanced content server data transfer to the client (see abstract).

As to claim 1, Malkin teaches a caching system for use with a data distribution system, comprising:

a master cache (content server 20) for receiving content for distribution by the data distribution system to one or more users (see fig. 1; col. 4, Malkin discloses a content server 20 that distributes content to the lower level proxy server);

a proxy server for receiving content that is distributed by the data distribution system from the master cache (see fig. 1; col. 4-5, Malkin discloses several levels of proxy servers that retrieve content from the content server on behalf of the clients and also discloses that a single level proxy server may exist between the content server and the client);

one or more local caches for storing the content received by the gateway destined for the one or more users (see fig. 1-2; col. 7, Malkin discloses second prefetch cache 249 at the client computers);

harvesting software coupled to the master cache and the uplink for processing information corresponding to probability distributions that the local caches satisfy requests from their respective users to predictively distribute the desired content to the respective users (see fig. 2; col. 6, Malkin discloses proxy server logic 295 which predictively retrieves content for the client from the content server).

Malkin does not explicitly disclose a gateway connected to the master cache. Malkin discloses that proxy servers are used to retrieve content from the content server (master cache) (see col. 4-6).

However, "Official Notice" is taken that the concept and advantages of using a Gateway to connect a resource distribution network to a subscriber or client network is old and well known in the network communication art.

Therefore, it would have been obvious to on of ordinary skill in the art at the time of the invention to modify Malkin by specifying the proxy server 24 to include a gateway server to connect the local cache with the content server (master cache) . One would be motivated to modify Malkin by including a gateway that connects the local caching system to the content server (master cache) system to allow data to flow between different networks.

As to claim 2, Malkin teaches a caching system for use with a data distribution system as in claim 1 above, wherein the harvesting software processes information contained in transmit hit/miss data and probability tables generated at the master cache (see figs. 2-3; col. 7, lines 15-20, lines 25-30; col. 9-15, Malkin discloses a statistics table 261 at the content server and proxy server for predictively retrieving content for the client. Malkin further teaches that the statistics tables contribute to the generation of prefetch hint information and reference probability based on actual reference and

historical behavior of the client).

As to claim 3, Malkin teaches a caching system for use with a data distribution system as in claim 1 above, wherein the content comprises http objects (see col. 4-6).

As to claim 4, Malkin teaches a caching system for use with a data distribution system as in claim 1 above.

Malkin does not explicitly disclose the limitation of NTTP objects. Malkin does disclose that the content distributed by the master cache is Internet content.

"Official Notice" is taken that the concept and advantages of distributing NTTP objects to data networks is old and well known in the network communication art. Therefore, it would have been obvious too one of ordinary skill in the art at the time of the invention to modify Malkin to include NTTP objects in the data distributed by the master cache. One would be motivated to do so since NTTP objects are well known and familiar formats for transferring information on the Internet.

As to claim 5, Malkin teaches a caching system for use with a data distribution system as in claim 1 above including indicating that content has arrived at the proxy server 24, for enabling the proxy server to prefetch content on behalf of the local cache, for requesting content to be transferred from the proxy cache to the local cache, for verifying that content has been transferred to the local cache during the transfer process, for disabling the proxy as an intermediary node for requesting content on behalf of the local cache at the completion of the process (see fig. 2-11; col. 17, Malkin discloses that the proxy server communicates with the local cache system of the client to request content on behalf of the client from the content server using the proxy object request handler routine, upon delivery of the object file to the client the object is marked deletable and hence the proxy is no longer caching the objects).

Malkin does not explicitly disclose a gateway connected to the master cache.

Malkin discloses that proxy servers are used to retrieve content from the content server (master cache) (see col. 4-6).

However, "Official Notice" is taken that the concept and advantages of using a Gateway to connect a resource distribution network to a subscriber or client network is old and well known in the network communication art.

Therefore, it would have been obvious to on of ordinary skill in the art at the time of the invention to modify Malkin by including at the proxy server 24 a gateway server to connect the local cache with the content server (master cache) . One would be motivated to modify Malkin by including a gateway that connects the local caching system to the content server (master cache) system to allow data to flow between different networks.

Malkin does not disclose the claimed limitation of a pseudo client. Malkin does disclose that the proxy server communicates with the local cache system of the client to request content on behalf of the client from the content server using the proxy object request handler routine (see fig. 2-11; col. 17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Malkin by specifying the functionality of the proxy object handler routine using a pseudo client to request content and transfer it on behalf of the client since the same functionality is achieved.

Malkin does not explicitly teach the limitation of a sibling cache. Malkin does teach that the proxy server acts on behalf of the client to cache information from the content server and further teaches that collaboration could be performed using sibling proxies (see col. 7-17; col. 20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Malkin by specifying the proxy first and second cache as a sibling cache for the client since the same functionality is achieved.

As to claim 6, Malkin teaches a caching system for use with a data distribution

system as in claim 5 above, wherein the Internet protocol is used to communicate between the local cache and the proxy server cache (see col. 4-6).

As to claim 7, Malkin teaches a caching system for use with a data distribution system as in claim 5 above,.

Malkin fails to disclose the use of Internet cache protocol to communicate between the local cache and proxy cache.

However, "Official Notice" is taken that the concept and advantages of using the Internet cache protocol (ICP) is old and well known in the Internet communication art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Malkin by using the ICP to communicate among the caches to provide a lightweight message format to be used for communicating among Web caches. One would be motivated to use ICP in Malkin to exchange hints about the existence of URLs objects in neighbor caches.

As to claim 8, Malkin teaches a caching system for use with a data distribution system as in claim 1 above, wherein the harvesting software processes statistics derived from the master cache (content server) and the local cache to produce a list of content to add to the master cache and a list of content to delete from the master cache and transmitting the verified content from the master cache to the local cache (see fig. 2-11; col. 9-15, Malkin discloses that proxy server logic 295 and content server logic 268 communicate statistical information to predictively retrieve or delete content based on probability calculated from clients request history).

Malkin does not disclose the claimed limitation of a pseudo client. Malkin does disclose that the proxy server communicates with the local cache system of the client to request content on behalf of the client from the content server using the proxy object request handler routine (see fig. 2-11; col. 17).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify Malkin by specifying the functionality of the proxy object handler routine using a pseudo client to request content and transfer it on behalf of the client since the same functionality is achieved.

Claims 9-16 do not teach or define any new limitation above claims 1-8 and therefore are rejected for similar reasons.

As to claims 17-19, Malkin teaches a caching system and method for use with a data distribution system as in the claims above.

Malkin fails to teach the limitation wherein the data distribution system, comprises a satellite-based data distribution system.

However, "Official Notice" is taken that the concept and advantages of using a satellite-based data distribution system is old and well known in the network communication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the network system Malkin by specifying a satellite-based data communication system to provide a flexible network communication architecture.

4. Applicant's arguments with respect to claims 1-16 filed on January 31, 2001 have been fully considered but they are not persuasive.

In the remarks, the applicant argues in substance that: A) the Malkin reference does not process information corresponding to probability distributions that local caches satisfy requests from their respective users to predictively distribute content to users and that whatever processing relating to probabilities is performed in the proxy servers and not in the content server as claimed; B) the Malkin reference does not suggest a need for a gateway server; C) the description regarding the statistics table is not a disclosure of the probability tables as claimed; D) the Malkin reference does not suggest the claimed limitation of the pseudo client and sibling cache of claims 5, 8, and 10.

In response to A); Malkin discloses a statistics table 261 at the content server

and proxy server for predictively retrieving content for the client. Malkin further teaches that the statistics tables contribute to the generation of prefetch hint information and reference probability based on actual reference and historical behavior of the client (see figs. 2-3; col. 7, lines 15-20, lines 25-30; col. 9-15).

In response to B); the Malkin reference does not have to express a need for a gateway server. Malkin teaches that even without the presence of the proxy hierarchy, the current invention can be applied to any network or client environment (see col. 19, lines 55-60). Several references been cited that use a caching gateway interposed between the client and content server such as Myerson, U.S. Patent No. 5,892,917; and Maddalozzo, Jr. et al., U.S. Patent No. 5,878,218. It is well known in the art to use a Gateway to connect a resource distribution network to a subscriber or client network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Malkin by specifying the proxy server 24 to include a gateway server to connect the local cache with the content server (master cache) to allow data to flow between different networks that use different protocols.

In response to C); Malkin discloses a statistics table 261 at the content server and proxy server for predictively retrieving content for the client. Malkin further teaches that the statistics tables contribute to the generation of prefetch hint information and reference probability based on actual reference and historical behavior of the client (see figs. 2-3; col. 7, lines 15-20, lines 25-30; col. 9-15). The statistics tables taught by Malkin meets the scope of probability tables since statistics tables contain probability variables such as hit/miss historical rate data used to predict content to be prefetched.

In response to D); Malkin does not disclose the claimed limitation of a pseudo client. Malkin does disclose that the proxy server communicates with the local cache system of the client to request content on behalf of the client from the content server using the proxy object request handler routine (see fig. 2-11; col. 17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Malkin by specifying the functionality of the proxy object handler

routine using a pseudo client to request content and transfer it on behalf of the client since the same functionality is achieved.

Malkin does not explicitly teach the limitation of a sibling cache. Malkin does teach that the proxy server acts on behalf of the client to cache information from the content server and further teaches that collaboration could be performed using sibling proxies (see col. 7-17; col. 20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Malkin by specifying the proxy first and second cache as a sibling cache for the client since the same functionality is achieved.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- A system and method for analyzing a web site log file by Myerson, U.S. Patent No. 5,892,917.
- Method and system for creating and utilizing common caches for internetworks by Maddalozzo et al., U.S. Patent No. 5,878,218.
- System for maintaining data coherency in cache memory by Barbara et al., U.S. Patent No. 5,581,704.
- Client-server computer system for updating client, server and object by He, U.S. Patent No. 5,734,898.
- Inter-cache protocol for improved web performance by DeSimone et al., U.S. Patent No. 5,787,470.
- Method for predictive prefetching by Mogul, U.S. Patent No. 5,802,292.
- System and method for predictive caching of information pages by Becker et al., U.S. Patent No. 5,878,223.
- Distributed storage management system using a cache server by Ali et al., U.S. Patent No. 5,896,506.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saleh Najjar whose telephone number is (703) 308-7613. The examiner can normally be reached on Monday-Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AN MENG AI, can be reached on (703) 305-9678. The fax phone number for this Group is (703) 308-9052.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Saleh Najjar
Examiner Art Unit 2154

ZARNI MAUNG
PRIMARY EXAMINER